

FIGURE 1

ATGGCGGGCGGACACGGCGGGCTCTGGTGTGACCTTCGCCTGCTGTCCGCG 60
 CGCGGGAGCTGCCATTGCCCCAGGAGACAACGTCAACTGAGCTGTATGAGGGACCC 120
 CTGCAAGTGATCTGGGCCCTGAGCAGGCTGTGGTGTGACTGCACCTGGGGCTACA 180
 GCTGCTGGGCCCTCGACCAGGGTACATGGAGCAAGGGATGGAGACACTGTACTAGAGCAT 240
 GAGAACCTGACCTGCTACCCATGGCTCCCTGTGGCTGTCCCTACCCCTAGAGCAAGAA 300
 GACAGCGATGAGGAAGCTTAGGATCTGGAAAGGTCACTGAGGGCAGCTATTCTGT 360
 CTGGCCCACAGCCGCTAGGAGTGGTCCAGCCAGGGTGTGCAAGCTGCCACA 420
 CTCGAAGACTTCTCTGACCCCGAGTCCCAGATTGGAGGAGAACGGGACAGCACGC 480
 TTTGAATGCCACACCAAGGGCTTCAGGGCCATCATTCTCCAAGTGGCTCTCCAGATCTTAGAT 540
 ACCGTGCCCTGAGGAGGCCGGCTCATCCTTCCAAGTGGCTCTCCAGATCCAGACGGGACAGGTG 600
 GTCCAGGACAGTGATGCAGGTCTTACCGCTGCGTGCCACCAATTAGCCGCAACGA 660
 TTCAGCCAGGAGGCCCTGCTACTGTGGCCCTCAGAGGGTCTTGGAGGCTACAGGGGG 720
 CAGGATGTGGTCAATTGTGGCAGGCCAGAGAACACACGGTAGTGTCTGGACAGAATGTA 780
 GTGATGGAGTGGCTGGCTCTGCTGACCCACCCCTTTGTGTCTGGTCCGACAGGAT 840
 GGAAAGCCTATCCACGGATGTCATGGTCTGGCCGGACCAATCTACTCATGCCAGC 900
 GCGAGCCCTGGCACTCTGAGTCTAGTGTCTGGCCCTCAGAGGGACAGGGGG 960
 TTCGCCACTGGCTGCTGAGCTCGAGTGCTGAGCTGGCTGCCCCAGCCATCTCGCAGGCACCC 1020
 GAGGGCCTCGCGACGGGGCAGCACCGCGCTCGACGGGATCCGTTGCGACCAATGGGCGCTC 1080
 CCACGGCCCGGCTGCACTGGCTGACGGGACGGGACTGGGTACAGGCCACGGGCTGAC 1140
 AAGGTGCAGGGGGTGGCGCAGCTGGTCACTCAGATGCCCTGAGGACGCTGGC 1200
 TACTACAGTGCAGAGAAAACAGGGGGAACTGCCAGGCCGGACTCGGGTACAGCCACGGCCTGAGC 1260
 GTAGTGGTGGCTGGCTGGCTGGAGCGGCTGAGTTGACAGGCCACGGCAGCAATATTGGC 1320
 AGCTCCTCTGCTGCTGGCTGGCTGGAGCGGCTGAGTTGACAGGCCACGGCAGCTGGC 1380
 TTCTCTTCACTACCAAAAGGCAAGGGAGTGGACAATGTGGAGTACCAAGTTGCAGTA 1440
 AACAAATGACACCAAGAGCTGCAAGTTGGGACCTGGAAACCCACAGGATTATGAGTT 1500
 TACGTGGTGGCTACTCCAGCTGGGGCCAGCCGAACCTCCAGGCCAGCCCTGGTCAT 1560
 ACACGGACGATGTCAGCCAGCGCAGCACCCAGCTTACCTTGCCAGGCCAACCCCTCG 1620
 GACATCAGGGGGCATGGCTGCCCTGCCCTCAGCCTGAGCAATGGACAGGTGCTGAAG 1680
 TACAAGATAGAGTACGGTTGGGGAGGAAGATCAGGTTTCTCCACCGAGGTGCTGGA 1740
 ATAGGAGACACAACCTTACGGTTAAACTACTCAGCCAAACAAAGTGTACCGAGTCCGGATT 1800
 TCAGCTGGCACTGGCGCTGGCTATGGAGTCCCTCTCAGTGGATGCAGCACAGGACACCT 1860
 GGTGTGCACAACCAGGCCATGGCTCCCTGAGGAAATTGAAGGTGAGGGCAAAG 1920
 ATGGAGTCCCTGGTGGTGTATGGCAGCCGCCCTCACCCACCCAGATCTGGATAC 1980
 AAACACTACTGGGAGAGGTGGGACAGAGGGAGGGCAGATGGTACCCGGGG 2040
 GGTGTGGAGATCAAGCTGGACGTCGGCCCTGAGGGTGAAGCTGTAGCTTCAAC 2100
 TATGAACTAGCCCAGTTAGTCCCTGGCAGGCCCTGAGGGTGAAGCTGTAGCTTCAAC 2160
 AAACACGAGGACGGCTACGCTGCTGTGGAGGGCAAGACGGAGAAGGGGCCACGCCA 2220
 GACCTGCCATCCATTGGCTTCGGTGGAGGGCAAGACGGAGGAGGGCAGATGGTACCCGGGG 2280
 AGCTCCACCTCCATTGGCTTCGGTGGAGGGCAAGACGGAGGAGGGCAGATGGTACCCGGGG 2340
 AACTACACTGTACGCTCGGCCCTGGGGCTCAGGAATGCTCCCTGGTCACCTACTAT 2400
 ACCAGCTGGAGAACACATTCTCATTGGGGCTGAAACCATTTACCAAGTACGAGTT 2460
 GCGGTACAGTCCCACGGAGTGGATATGGATGGGCTTGGCTCCGCTGAGCCCTGACACCA 2520
 ACCCTGCCCTGCCCTCAACACCTCTCTGACCTGCCCTGAGCCCTGACACCA 2580
 TCCACCGTTCGGTTACACTGGTCCCCCAGGGAGCCAACTGGTCCGCTGAGCCCTGACACCA 2640
 CTAATTCTCTACAGCAACAACCACCCAGGCCAACACCGAGTGGACACTGCTCACCA 2700
 GAGGGAAACATCTCAGTGCAGAGGTCCATGCCAGAGGTGAGATTGTGGAGTAT 2760
 AAGATGGAGGCCGACAGAGGGGGCTGGGCCCTTCCCGCTGAGGATGTGATT 2820
 ACTCTGCAAGAGACATTCTCAGACTCCTGGATGTGCACCCGTCACGGCATCTCGT 2880
 GGTGTCTGGCTGGCCCTTCTGGCTCCCTGAGGGCAGGGGGCAACTCCAGATGGAGTGGAGTCCCTC 2940
 TCCCACAGGAAGCCCTCCGGATTGTCTCTCAGGCCACCCAGGGAAACCCAGCGCTC 3000
 TACACAAGAGCTGGCTGGCTCCAGGATGGTCCCCACCCCTAGATGTGGAGACAAGGCTGAA 3060
 GTGCATCTCGTCCCCAGGATGGTCCCCACCCCTAGATGTGGAGACAAGGCTGAA 3120
 GTACACAGCCTTATGGTGGCAGTGGTTCAGATTGCCGGGGCACTCCAAGAGAAAGATC 3180
 TCCTGGCTCAGGCCGGGACAAACTGGCAGGCTCTGGCAGGCTGTGAGCTGCC 3240
 CAGGGTAGTGGTCAAGGCCGGCTCTGACCCGTCAGTGGCTGCTGCCCTCAGCGGGAAACGGG 3300
 CCGTCCCCAGCCTGCAAGGAATCAGGTGGAGCTGAGGTCAATTGTCCACTCCGACTTCGGT 3360
 GCATCAAAGGATGTCTGACCTCCACCTCAAGACCTGGAGCCAGAGGAACCACTGACT 3420
 GCATCAAAGGATGTCTGACCTCCACCTCAAGACCTGGAGCCAGAGGAACCACTGACT 3480

FIGURE 2A

GCAGAGACTCTGCCCTTCCACGCTGGAGCTGTGGATCTGCTCAAGGAGCAGACTGGCTG 3540
GGCAGGGAGCTGGAGGGTGCCAACCAACAACCAGTGGGCCAGAGAGGCTCACCTGCTG 3600
CCAGAAGCAGCCAGTGCCCTCTGCTCCTGCTCAGACCTCCAGCCAGCACTGCTATAGAG 3660
GAGGCCCTGGAAAAGCTGCCAGCCAAAGCCCTGTGCTCTAACAGTCAGCCAAAGC 3720
CTTCCCAGGGCCCTGTCTCTGCTCAGGCCCCGTGAGCAGAAGGCAGATATGGCTCA 3780
GGAACATGCCATGGCTACACATGTGTACTAGAGATATCCATAAGTCCTGGAGC 3840
CTCTAGGGTCTTGGCTGGGAGAACCTTACTCTCCCTCATATTCTGCATCA 3900
CATACAGGAGGGACTTGAGAACAGCTCTGTGTAATGGACACGTGTAAGTGTGTGT 3960
GTGTGTGTGTGTGCTGGTTGAGCTAGAAACCTCTCCCTATGTAGCACTCACTGTG 4020
GCCTAGTTGACCCCTCGTGGCAGGATGGTAAACAGTGTACAGTGCAGCTTGTGAGCT 4080
TTTAGCCTGTACCTAGCCTTTATTACACTCTGAGAGTGTCTCCAGTGCTGTGCTAC 4140
AAAGACAGGCCAGCCCTTCTGTGAGCTCAGCTGCTGAGCAGAGTGCAGTCAACTCCAC 4200
GGGCCTATGACACCGCAGCCTACCACAGCATGGCTGTCATCCCCCTGGCCTCTAAGGTC 4260
CAGATGCTGGGTGAACCCAGCTCAGCTCCCTCTCTGAGCATCTCTGTACCTAATT 4320
TTGTAATCTGGGAAGTGCCTGGTTGGAAATCTTCTTCGACCCCTGCTCCCTCTGCC 4380
CCTCCCTCATTTGATGCCCTGATTCCCTACTGCTGTTTCAATTCTGTCTGCCATG 4400
CTTGTCTTATGCTGTGTTCTGTCCTGAGTCAACCTATGCACCCCTTCTAACAA 4560
ACATGACTACCTCATGCTGCTCAGACCATAGTGTGACCCCTGGTCCACAGCTCC 4620
CTGCCAACCGCCTCTGGCAGATGAGCCACTCCAAGTAGATCTGGAAAAGACCTTG 4680
TGGCTGTGGCTGCCCTCCCTGGTGGAGATGAGAAGGGTTCTATGGAAGAGAT 4740
GAGTCAGGCTGACAGGGGAACCCCAAGAAGGGTAGGGAGCTACTGGGTGTGCTTTGACGTGCACTG 4860
AAAAAAATGGCTGCCACCATCTGCACAGAGAGATGGGTGTGAGAAGGTTCTATGGAAGAGAT 4920
CTGGCTGAAACTGAAGGGTAGGGAGGGAGCTACTGGGTGTGCTTTGACGTGCACTG 4980
CTGACCCCTGGAGCCCTGAACTGGCTCAGAGTAGCAAAGAGTTCTCCAAAGATGCTGT 5040
AAGGGAAAGTCTTGATAGGAAAGGGCGCTGGCTATTATTTATCTTCTAAC 5100
CTGAATCCAAAATCATCTTACACAAAGGGCCAAGCCTGACTGGTATTCTCAGTCAC 5160
AAGAGCCATGCCATCTCTGGTTCTCACCTCAGTCATGTCCAGAATTGTCAGATCCA 5220
GTGGCATCTGCTCTGTCACATGGTGGACATCTTCAACTGGCTGGCACATCAAGTGT 5280
AACTCTGGCTCTGGGCCAGTTAGAAAATAACAGTCTATTCTCCCTTATTATTTA 5340
TTTTATTTATTTATGCTTCTGAGCTGTTCTGAAAGCGTGTGTTATTCTCAGC 5400
AGCCTGTGTCACTCATGTTGACCCACCCACATTCTCTCCCTCTCAGC 5460
CAGCCTATGATAACACTAAAGATTATAATGCTGGCTCGTATCTCATTAAAGACAGGAT 5520
TGTCACTGAACACTCTATAGCATTCAAAGGGCCACGCCAACACCACCGTATGTT 5580
CTTCATTGCTCTGAAGGTCAAGAGCCTCATTTGTTCTGGTTAGATTCTTCTCC 5640
TTGCCCTGAATGAAAACCGTTAACAGTAGGCTCTAGCATCACACCACATAGTCAT 5700
TCCTCATGTTCTGTTAACAGCACTGGAGGTCTGGGTTAAATTAAAGCTGCAA 5760
TGAGACAATTATAACCCATTAGGCTGGGTGGAAAATTGTTCTCAAAGCAAAAGTCAA 5820
TAAATCTGGTATGTTGGGCTCTGAGTAACCTGGGAGTGTAGCTTGTGACTTTGAC 5880
AGGTCTTATTAGGAAAGTCTGTTGGCCTTACAGGCATTAGTCCTTGTGCTTTG 5940
ATGGATGCCTTAAGTCTTGGAGTCTCATTTAAGAATTCTTCTGAAGCATGACAA 6000
GTGTATCGCAATACTACATGCTACTCGTTACCTGGCTAGTTGCTGGTTATT 6060
AATTGCACCTCCAGCATCATGCTCCCTTACAAATGATATTCTTATTGTTACAC 6120
TAAGGTGTGATCATGATCTGCTCTGTAAAGAATTAAACTATTCCAGAC 6176

FIGURE 2A

10 20 30 40 50 60 70 80

MARADTGRGLLVLTFCLLSARGELPLPQETTVKLSCDEGPLQVLGPEQAVVLDCTLGATAAGPPTRVTWSKDGDTVLEH
ENLHLLPNGSLWLSSPLEQEDSDDEALRIWKVTEGSYSCLAHSPLGVVASQAVVKLATLEDFLHPESQIVEENGTR
FECHTKGLPAPIITWEKDQVTVPPEPRILTPKWLLQILDVQDSDAGSYRCVATNSARQRFSQEASLTVALRGSLEATRG
QDVVIVAAPENTTVSGQNVVMECVASADPTFVSWVRQDGKPISTDVVLGRTNLLIASAQPRHSGVYVCRANKPLTRD
FATAAAELRVLAAPAISQAPEALSRTASTARFVCRASGEPRPALHWHLDGIPLRPNGRVKVQGGGSLVITQIGLQDAG
YYQCVAENSAGTACAAAPLAVVREGLPSAPTRVTATPLSSSVLVAWERPELHSEQIIGFSLHYQKARGVDNVEYQFAV
NNDTTELQVRDLEPNTDYEFYVVAYSQLGASRTSSPALVHTLDDVPSAAPQLTLSSPNPSDIRVAWLPLPSSLNGQV р
YKIEYGLGKEDQVFSTEVPGNETQLTNSLQPNKVYVRVISAGTGAGYGVPSQWMQHRTPGVHNQSHVPFAPAEKVRAK
MESLVSWQPPPHTQISGYKLYWGEVGTEEADGDRPPGGRGDQAWDVGVPVRLKKVKQYELTQLVPGRPYEVKLVAFN
KHEDGYAAVWKGKTEKAPTPDLPIQRGPPLPAHVHAESNSSTSILRWKKPDFTTVKIVNYTVRFGPWGLRNASLVYY
TSSGEDILIGGLKPFTKYEFQSHGVDMDGPFGSVVERSTLPDRPSTPPSDLRLSPLTSTVRLHWCPTEPNEIVEY
LILYSNNHTQPEHQWTLLTTEGNIFSAEVHGLESDFTRYFFKMGARTEVGPGFSLQDVITLQETFSDSLDVH **AAGRAV**
GVLGLGLECHEACNCAGE RQSSHREALPGSSSGTPGNPALYTRARLGPPSVPAHELESLVHPRPQDWSPPPSDVEDKAE
VHSLMGGSVSDCRGHSKRKISWAQAGGPNWAGSWAGCELPGSGPRPALTRALLPPAGTGQTLQALVYDGIKNSGRKK
PSPACRNQVEAIVHSDFGASKGCPDLHQDLEPEEPLTAETLPSTGAVDLSQGADWLGRELGCGPTTSGPERLTCL
PEAASASCSCSDLQPSTAIEEAPGKSCQPKALCPLTVSPSLPRAVSSAQVP

FIGURE 2B

10 20 30 40 50 60

1 AGGCTGGTGGCGCGCGGGCGCGTGTCCCCTGTGGTGCAGGGTGGCACACTGGCGGGCG
 61 CCCCCCGCGTGGGCCGCTAGCCCAAGATGGCGATGGAGGGCGGGCGAGCTGGCCGGCC
 121 CGGGCCCCCGCGCCGGCCCCCGCTCGGCCCCGGCCCCGGAGGCCCCGCGCCCCGCCCCGCG
 181 CGCCGCGCCTCCCGGAGCCACTGACGCCGGCGGCCCTCCCCCGGCGGGCCCCAGGCG
 241 CCCGGACGGCGGGCAGCGGCCGAGCCCTATGGCGCGGGCGAACACGGGCCGCA
 splice
 site
 | intron 1 >>
 lyLeuLeuValLeuThrPheCysLeuLeuSerAlaArg |
 301 GGCTCCTGGTGCTGACCTTCTGCCTGCTGTCGCCGCGCGTAAGGGCCC GG TGCCGCA
 361 GTCGCGAGTGGCGTCCCCGGCGCCCGCGATGCTTGCGCCGGGCTGTGGGACTTG
 421 CCCCCAGGGGTGTGTGCCTTGCTGTGCACAGCCTGGCACCGTGC GTGCCCTGCGC
 481 GTGGCCTTGTGCATGTGAG

FIGURE 2C

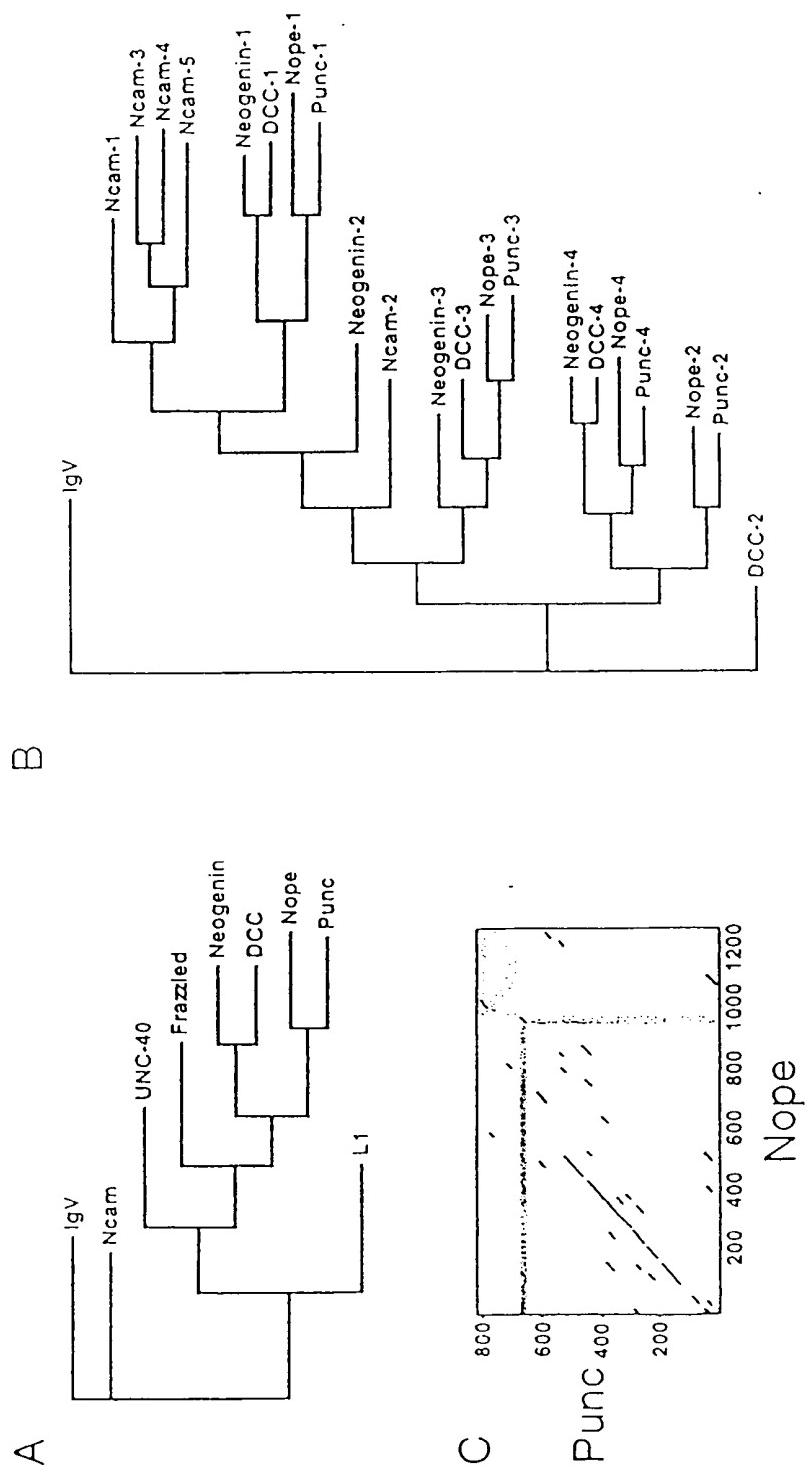


FIGURE 3

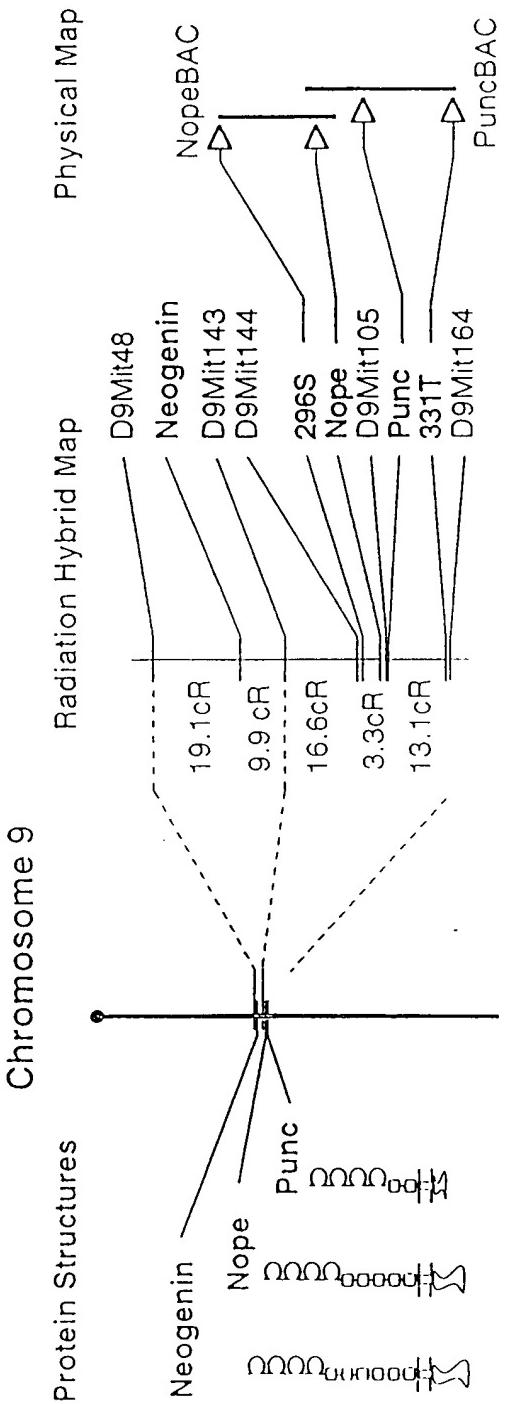


FIGURE 4